Introduction: We present a set of experiments and demonstrations to be done in the lab/classroom for the introductory course in Astrobiology (101). Experiments are collected and/or adapted (and even in some cases translated to Spanish), from different sources, e.g. Carolina Biological Supply, Contemporary Laboratory Experiences in Astronomy (CLEA Project), as well as some designed by ourselves. The topics covered by these activities include, planetary and galactic habitability; formation of stars and planets; life in extreme terrestrial environments and the potential of such organisms to adapt to other planets; origin and evolution of life on Earth, SETI, among others.

Aims: While it is true that the main objective of Astrobiology could be reduced to the search for life beyond Earth, addressing the search necessarily have to go to understand the origin of life on Earth; meet environmental factors that hinder their existence and that encouraged; know about the physical attributes of the celestial bodies that could create or sustain life, both in the solar system and outside, and a large number of other issues. Encouraged by the enthusiasm of high-school, BS, and graduate students that we have received in the last years, through different scientific initiation programs, as well as formal courses, we present this project in order to support students to understand the main concepts of Astrobiology through experimentation. Although most presentations in introductory Astrobiology formal courses are theoretical, without laboratories, we have found that many of the concepts in Astrobiology are best understood when we make any practical activity, even when the “experiment” is conceptual or computational. But this not only happens with Astrobiology, but in general the process of teaching and learning at all levels. In this project we intend to facilitate the teaching/learning of some concepts of Astrobiology, in both, formal courses (BS and Grad-level) as in informal education and outreach. The objectives of this project are: (1) to develop, collect, and adapt, a series of laboratory practices, exercises and demonstrations, at different levels of complexity to apply to graduate students in astrophysics and Space Sciences, undergraduate students in science and engineering, and the general public in special events and science fairs; (2) to generate or adapt material support for the realization of such practices, and (3) to train teachers and students interested in teaching and dissemination of Astrobiology.

We will present data about our experiences teaching Astrobiology and using some of these demonstrations, during the last 13 years in Mexico, and we hope to discuss with other colleagues interested and a practical view of teaching Astrobiology.

Acknowledges: This project is supported by grants PAPIE-DGAPA-UNAM PE109915, and CONACYT-AEM 275311. Authors are members of the Mexican Astrobiology Society (SOMA).